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CAGES USED IN FUMIGATION TESTS WITH ADULT JAPANESE BEETLES, THEIR DISTRIBUTION AND RECOVERY

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The distribution of cages of Japanese beetle adults in experimental fumigations of refrigerator cars, truck bodies, and other enclosures and the method used by the writer for their recovery is here described, as it may prove of value to other workers.

The cages are fashioned from 1-pint waxed cardboard cartons with friction tops. The central disks of the top and bottom are cut out, leaving a 1/2-inch margin to which disks of 12-mesh screen wire are secured with liquid solder. Three windows, 1 by 2 inches, equally spaced in the side of the carton, are covered by a strip of screen similarly fastened around the carton and held in place over the windows with rubber bands about the carton while the solder is hardening. This type of cage offers no obstacle to the circulation of the fumigant during treatment and none to its escape during aeration.

A loop of wire is tied into each screen bottom, to the outside of which is attached a 5-foot length of 5/64" waxed or tarred fishline. After the introduction of the test beetles the lid is secured by a rubber band around the cage. Cages are distributed as desired in the Space to be fumigated. If no load is involved, at least two are placed at floor level and two near the ceiling at each end and midway of the enclosure. If the car or chamber is loaded, the lower set of cages is distributed over the top row of bags or other containing Fishline has two distinct advantages over any other type of cord tried. Being less flexible than other types, it can be looped over wall projections and will hold sufficiently to support the cage, yet so loosely that a tug on the line will release it. Because of this

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same characteristic, even although a number of lines become thoroughly entangled, each can be quickly and easily pulled out of the composite jumble.

For use in refrigerator cars, with the cages in place, a length of fishline is stretched on the floor or over the load for the length of the car, with a central loop leading to the door to be opened after fumigation. The lines from the cages at each end are tied to the ends of this line, while those in intermediate locations are tied to it with running loops and slip knots. When the fumigation is completed, all cages can be quickly removed through the opened door without entering the car, by catching the loop and hauling in the ends with their burden of cages. This entails much less hazard to the operator than entrance into the fumigant-filled and frequently dark space for collection of individual cages, particularly where little or no aeration is allowed before removal of the test insects.

In fumigations of trucks or fumigation chambers in which the door is at one end, the lines can be arranged to suit each separate shape of enclosure. While the drag and cage lines are usually badly tangled at removal, they can be separated easily and quickly, as already noted. When not in use, each cage line is wrapped around the cage in a tight coil and held in place by a wide rubber band.

This procedure with various modifications has been used extensively in the development of methods of methyl bromide fumigation for use in meeting Japanese beetle quarantine requirements for shipment of perishable commodities.